

CLAIMS

1. Plantar insole for use in footwear between an insole of the footwear and the plantar surface of a foot, the plantar insole being delimited by a main upper surface (1) adapted to be in contact with the plantar surface of the foot, a main lower surface (2) adapted to be in contact with the footwear insole and a peripheral contour (3) conformed to extend beyond the plantar surface of the foot and to fit inside the interior contour of the footwear, the plantar insole having at least two different stiffnesses or hardnesses as a function of the main surface regions (6-13) concerned, characterized in that :

15 - the insole has, on its main surface (1), bearing regions (6-9) disposed to lie under each of the major bearing areas of the foot,

20 - the bearing regions (6-9) have a relative stiffness or hardness lower than that of the other regions (10-13) of the main surface (1), and

25 - the bearing regions (6-9) are delimited by a contour flanking said major bearing regions of the foot.

2. Plantar insole according to claim 1, characterized in that the bearing regions (6-9) on the main surface (1) of lower relative stiffness or hardness comprise an anterior bearing region (6) adapted to lie under the toes of the foot, an intermediate bearing region (7) adapted to lie under the metatarsal heads of the foot, a posterior bearing region (8) intended to lie under the heel of the foot, and an external bearing region (9) intended to lie under the antero-external portion of the calcaneum, under the cuboid and under the fifth metatarsal of the foot.

3. Plantar insole according to either claim 1 or claim 2, characterized in that the main surface regions (10-13) of higher relative stiffness or hardness comprise

a peripheral border (10) entirely surrounding the bearing regions (6-9) of lower relative stiffness or hardness.

4. Plantar insole according to any one of claims 1 to 3, characterized in that the main surface (1) bearing regions (6-9) of lower relative stiffness or hardness all have the same lower relative stiffness or hardness.

5 5. Plantar insole according to claim 4, characterized in that said lower relative stiffness or hardness is from 20 to 35 Shore A.

10 6. Plantar insole according to any one of claims 1 to 5, characterized in that the main surface regions (10-13) of higher relative stiffness or hardness all have the same higher relative stiffness or hardness.

15 7. Plantar insole according to claim 6, characterized in that said higher relative stiffness or hardness is from 38 to 50 Shore A.

20 8. Plantar insole according to any one of claims 1 to 7, characterized in that, for a plantar insole of size 42 :

25 - the anterior bearing region (6) is circumscribed in a polygon defined by the following vectors : ab (2.6 cm, 240°), bc (2.6 cm, 180°), cd (0.9 cm, 120°), de (1.9 cm, 50°), ef (6.3 cm, 120°), fg (2.5 cm, 0°), gh (5 cm, 310°), hi (1.6 cm, 270°), ia (0.8 cm, 0°);

30 - the combination formed by the intermediate bearing region (7), the posterior bearing region (8) and the external bearing region (9) is circumscribed in a polygon defined by the following vectors : jk (2.2 cm, 270°), kl (4.6 cm, 180°), lm (2.2 cm, 90°), mn (1.1 cm, 0°), no (3.7 cm, 105°), op (4.8 cm, 195°), pq (7.7 cm, 215°), qr (3.7 cm, 160°), rs (3.2 cm, 90°), st (1.8 cm, 35°), tu (14.8 cm, 10°), uv (4.3 cm, 305°), vj (1.7 cm, 270°).

9. Plantar insole according to any one of claims 1 to 8, characterized in that the thickness of the plantar insole varies along its length with a greater thickness in the central region and a lesser thickness in the end regions, considering the length of the plantar insole.

10. Plantar insole according to any one of claims 1 to 9, characterized in that it is constituted by assembling by sticking a first elastomer material constituting the regions (10-13) of higher relative stiffness or hardness and a second elastomer material constituting the bearing regions (6-9) of lower relative stiffness or hardness, with sticking on an antibacterial upper film (4) and a comfort fabric (4a).